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Type 0659C / 0659P

Time-lag Fuse Series (High -Breaking Capacity)

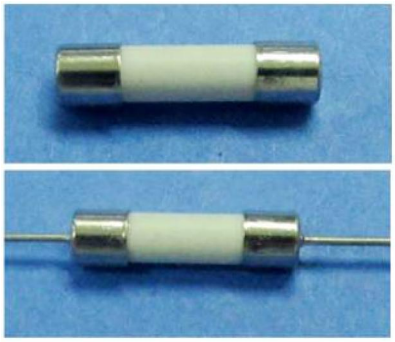
HF Pb 0659C/0659P Series, 5x20mm Ceramic Tube Time-Lag Fuse RoHS Compliant

Description

5x20mm Time-Lag surge withstand, high breaking capacity, ceramic body cartridge fuse designed, approved and complied with IEC 60127-2,standard sheet 5.

Features

- High breaking capacity (250V ac @1500A)
- Meet IEC standard 60127-2, sheet 5
- Wide operating temperature range
- Bulk and Tape & Reel packing available
- Full compliance with EU Directive 2011/65/EU and amending directive 2015/863
- Halogen Free
- Lead Free



Applications

Provide individual protection for components or internal circuits.

- Power supplies
- Battery charger
- Monitor
- Adapter

LEAD FREE = Pb
HALOGEN FREE = HF

Physical Specifications

Materials	Body : Ceramic
	Cap : Nickel Plated Brass Caps
	Leads : Matte Tin Plated Copper
Marking	On Fuse :
	“bel”, ”T”, ”Current Rating”, “H”,”250V”,
	”Appropriate Safety Logos”
	On Label :
	"bel","0659C”or”0659P","T","Current Rating", “H”, "Voltage Rating", "Interrupting Rating", "Appropriate Safety Logos" and " ", " "(China RoHS compliant).

Electrical Characteristics (IEC-127-2 STANDARD SHEET 5)

Rated Current	1.5 In		2.1 In	2.75 In		4 In		10 In	
	MIN	MAX		MIN	MAX	MIN	MAX	MIN	MAX
1A to 3.15A	1	30		0.75	80	95	5	10	150
4A and above	1	30		0.75	80	150	5	10	150
	hr.	min.		sec	sec	ms	sec	ms	ms

In clause 9.2, the test voltage is 125VDC.

Safety Agency Approvals

Safety Agency	Safety Agency Certificate	Ampere Rating/ Voltage Rating	Ampere Range / Volt @ I.R. ability*
	40039275	0659C: 1A-6.3A/250V AC 0659P: 1A-6.3A/250V AC	1A-6.3A/250V AC@1,500A
	PSE21021835 PSE21021836 PSE21021840 PSE21021841		0659C 1A-5A/250V AC@1,500A 0659C 6.3A/250V AC@1,500A 0659P 1A-5A/250V AC@1,500A 0659P 6.3A/250V AC@1,500A
	Self-declaration No: 2020970207000297		1A-6.3A/250V AC@1,500A
	E20624		1A-6.3A/250V AC@1,500A 1A-6.3A/600V AC@150A

*I.R.= Interrupting Rating = Short Circuit Rating(Amps)

Specifications subject to change without notice

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Environmental Specifications

Shock Resistance	MIL-STD-202G, Method 213B, Test Condition 1 (100 G's peak for 6 milliseconds; Sawtooth waveform)
Vibration Resistance	MIL-STD-202G, Method 201A (10-55 Hz, 0.06 inch, total excursion).
Salt Spray Resistance	MIL-STD-202G, Method 101E, Test Condition B (48 hrs.).
Insulation Resistance	MIL-STD-202G, Method 302, Test Condition B (After Opening) 100,000 ohms minimum.
Solderability	MIL-STD-202G, Method 208H
Resistance to solder Heat	MIL-STD-202G, Method 210F, Test Condition B (260+/-5℃,10+/-1 sec)
Thermal Shock	MIL-STD-202G, Method 107G, Test Condition B (-65℃ to +125℃).
Operating Temperature	-55℃ to +125℃
Terminal Strength	IEC-68-2-21

Electrical Specifications

Part Number	Ampere Rating	Typical Cold Resistance (ohms)	Volt-drop @100%In (Volt) max.	Voltage and Interrupting Ratings	Melting I²T <10 mSec (A² Sec)	Melting I²T @10 In (A² Sec)	Maximum Power Dissipation (W)	Agency Approvals			
0659C1000-XX 0659P1000-XX	1A	0.134	0.191	See Table of Safety Approvals on Page 1 for Voltage and associated Interrupting Ratings	2.3	2.4	0.45	Y	Y	Y	Y
0659C1250-XX 0659P1250-XX	1.25A	0.103	0.187		3.2	3.3	0.56	Y	Y	Y	Y
0659C1600-XX 0659P1600-XX	1.6A	0.076	0.178		5.6	5.4	0.60	Y	Y	Y	Y
0659C2000-XX 0659P2000-XX	2A	0.049	0.141		14.4	14.0	0.70	Y	Y	Y	Y
0659C2500-XX 0659P2500-XX	2.5A	0.036	0.133		28.1	25.0	0.87	Y	Y	Y	Y
0659C3150-XX 0659P3150-XX	3.15A	0.024	0.110		25.0	24.8	0.86	Y	Y	Y	Y
0659C4000-XX 0659P4000-XX	4A	0.016	0.095		56.3	51.2	0.89	Y	Y	Y	Y
0659C5000-XX 0659P5000-XX	5A	0.013	0.090		88.2	92.5	1.14	Y	Y	Y	Y
0659C6300-XX 0659P6300-XX	6.3A	0.009	0.086		139.2	142.9	1.39	Y	Y	Y	Y

Consult manufacturer for other ratings

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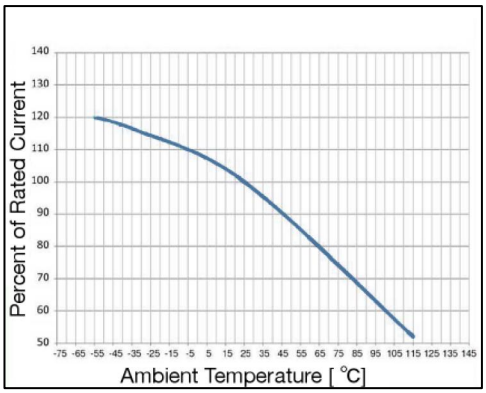
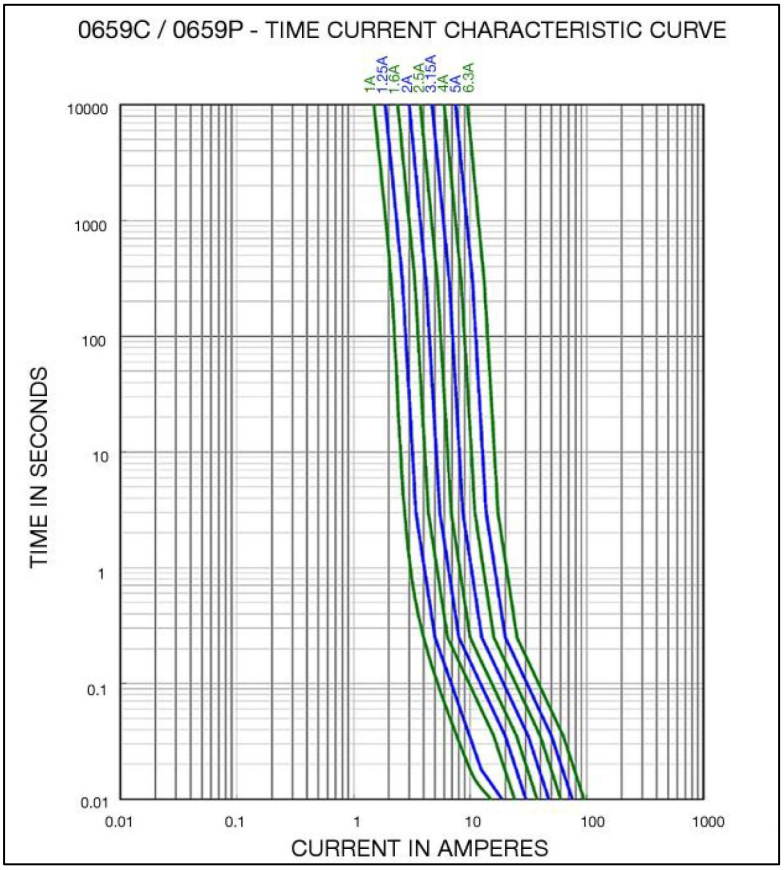
Temperature Derating Curve

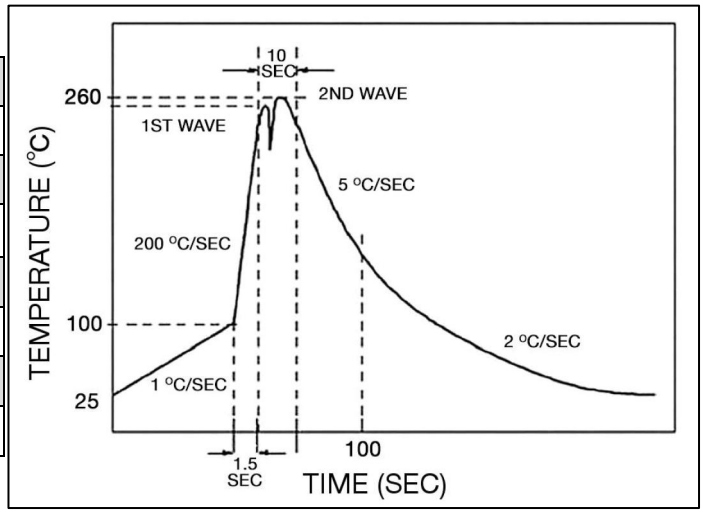


Average Time Current Curve



Soldering Parameters

Lead-free Wave Soldering Profile	
Wave Soldering Parameter	
Average ramp-up rate	200℃ / second
Heating rate during preheat	typical 1 - 2℃ / second Max 4℃ / second
Final preheat temperature	within 125℃ of soldering temperature
Peak temperature Tp	260℃
Time within +0℃ / -5℃ of actual peak temperature	10 seconds
Ramp-down rate	5℃ / second max.



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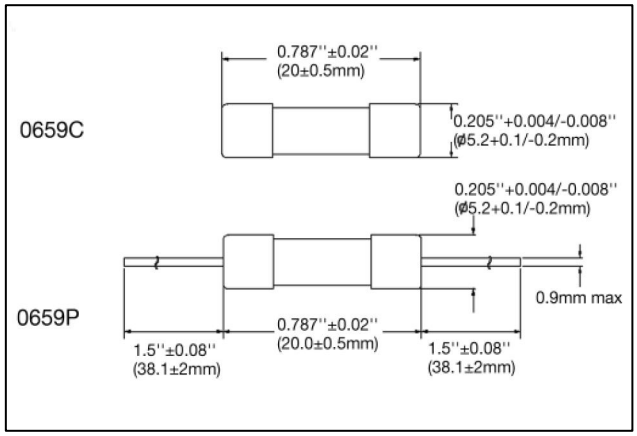
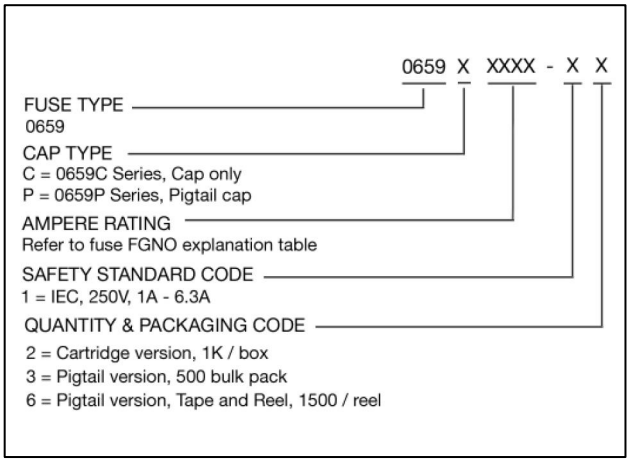
Fuse FGNO Explanation
0659 X [XXXX] -XX
0659C/P=0659C/P; [XXXX]=Ampere Rating; XX=See Ordering Information as below

Fraction	Decimal	Amps	Bel FGNO[XXXX]
	1.0	1	1000
1-1/4	1.25	1.25	1250
	1.60	1.6	1600
	2.0	2	2000
2-1/2	2.5	2.5	2500
	3.15	3.15	3150
	4.0	4	4000
	5.0	5	5000
	6.3	6.3	6300

Mechanical Dimensions



Ordering Information



Packaging

Packaging Option	Packaging Specification	Quantity	Packaging Code	Inside Tape Spacing
Bulk	N/A	1000	12	N/A
Bulk (Pigtail Type)	N/A	500	13	N/A
Tape & Reel	EIA-296-F	1500	16	10mm Pitch and 63mm

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